

SILVER BEACH RESORT (PWSNO 1280172) SOURCE WATER ASSESSMENT REPORT

March 21, 2002



State of Idaho Department of Environmental Quality

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SOURCE WATER ASSESSMENT FOR SILVER BEACH RESORT

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your particular drinking water source is based on a land use inventory within a 1,000 foot radius of your well, your water quality history, construction characteristics of your well or wells, and site specific sensitivity factors associated with the aquifer your water is drawn from.

This report, *Source Water Assessment for Silver Beach Resort* describes the public drinking water source, potential contaminant sites located within a 1000-foot boundary around the drinking water source, and the susceptibility (risk) that may be associated with any potential contaminants. This assessment, taken into account with local knowledge and concerns, should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

Potential Contaminant Inventory. The Silver Beach Resort public water system, located at the west end of Spirit Lake in Kootenai County, Idaho, serves a resort and RV park. Drinking water is supplied by a 144-foot deep well in an open area about 220 feet from the lake. The 1000-foot boundary delineated around the well encompasses a wooded hillside, a paved road and some seasonal homes in addition to the RV park and resort. Potential ground water pollutants associated with campgrounds include, inorganic chemicals, volatile and synthetic organic chemicals and microbial contaminants.

The map on page 4 of this report shows the well location, the 1000-foot boundary and approximate locations of roads and buildings and the lake relative to the well

Water Quality History. Silver Beach Resort is required to monitor quarterly for bacterial contamination. Total coliform bacteria were present in samples drawn in December 2000, October 1997 and May 1994. Follow up sampling results were negative. The system is not required to disinfect its water. Annual tests for nitrates have been negative.

Well Construction. The Silver Beach Resort well was drilled in April 1993 to a depth of 144 feet. The Resort formerly used water from Spirit Lake. The outer well casing and surface seal terminate in a soil layer the well log describes as firm gray granite at a depth of 41 feet. The inner casing is 4-inch PVC extending from 6.5 to 144 feet below the surface. The inner casing is perforated from 104 to 144 feet. The static water level in the well is at 68 feet. The 1997 sanitary survey of the system notes that the well casing extends 16 inches above ground and is fitted with a watertight vented well cap.

Well Site Characteristics. The well is situated on an open well lot in the RV park. The underlying granite formation provides some protection against migration of contaminants toward the well. The well log reports that strata bearing small amounts of water were encountered from 2 to 8 feet, and 73 to 75 feet below the surface. The most productive stratum is between 128 to 135 feet. With the pump set at 140 feet, the well produced 75 GPM for an 8-hour period.

Susceptibility to Contamination. The DEQ susceptibility analysis for the Silver Beach Resort well, incorporating information from the public water system file and the well log, ranked the well at low risk of contamination. The susceptibility analysis worksheet for your well on page 5 of this report shows how your well scored. Formulas used to compute the final susceptibility scores are shown on the bottom of the worksheet. The greatest risk factor for the Silver Beach well is that it is relatively shallow.

Drinking Water Protection. This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

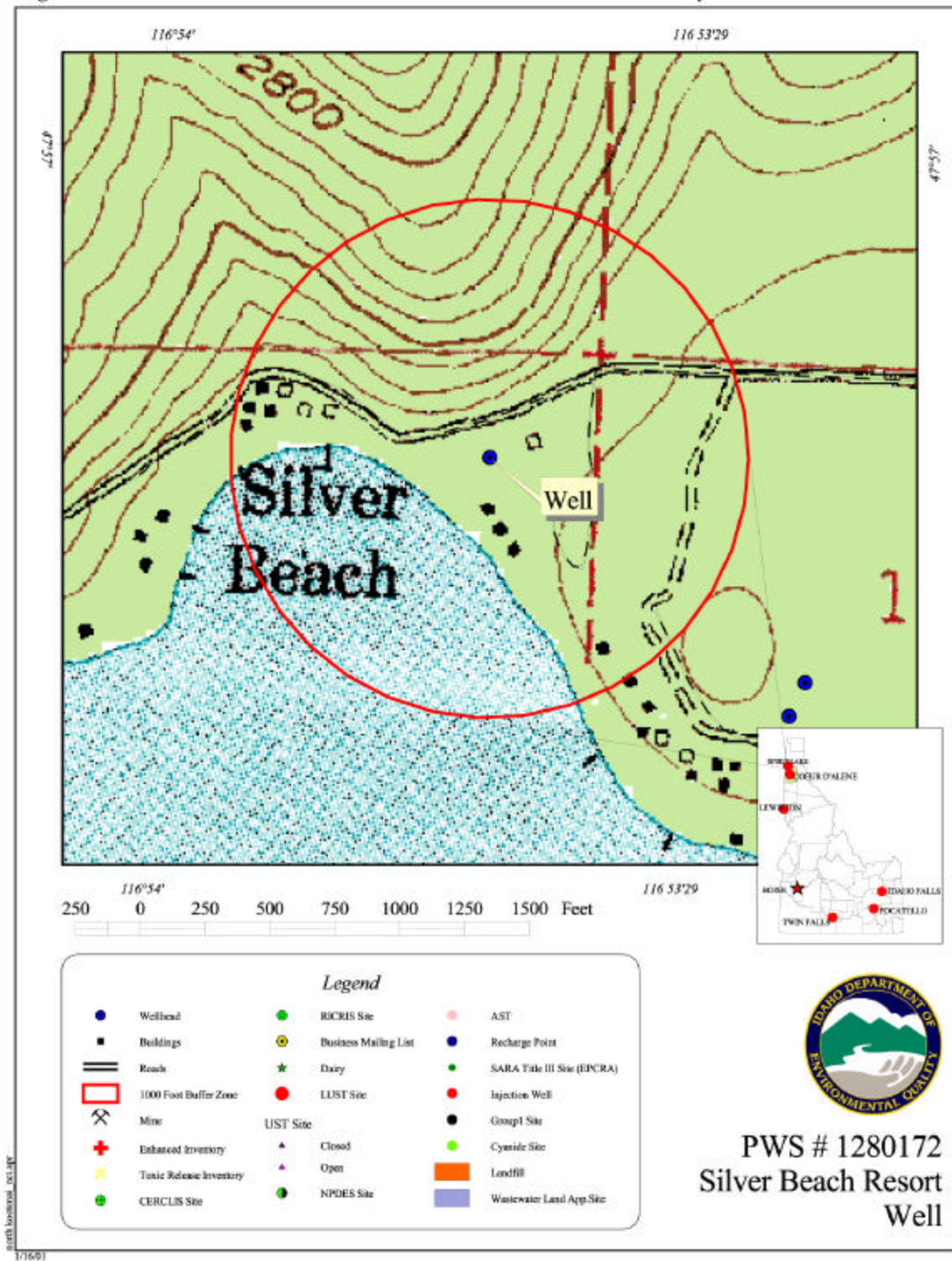
A drinking water protection measure Silver Beach Resort should consider is covering the well head and fencing the well lot (50-foot radius around the well) to keep pets, livestock and wildlife away. A fence also serves as a reminder that the well lot needs to be kept free of lawn care chemicals and parked vehicles. Because Silver Beach Resort doesn't have direct jurisdiction over the entire 1000-foot protection zone around its well, it will be important to form partnerships with neighbors, and public agencies to regulate land uses that can degrade ground water quality. The goal of source water protection is to maintain current water quality for the future despite the changes we can expect with population growth in North Idaho.

Additional ideas for ground water protection are available on the DEQ website,

<http://www.deq.state.id.us>

If you would like help in developing a drinking water protection plan please telephone the Coeur d'Alene Regional Office of DEQ at 208 769-1422.

Figure 1. Silver Beach Resort Delineation and Potential Contaminant Inventory.



Ground Water Susceptibility

Public Water System Name :

SILVER BEACH RESORT

Well :

WELL #1

Public Water System Number :

1280172

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| 1. System Construction | | SCORE | | | |
|--|---------------------------------|--------------|----------|----------|-----------|
| Drill Date | 4/19/93 | | | | |
| Driller Log Available | YES | | | | |
| Sanitary Survey (if yes, indicate date of last survey) | YES 1997 | | | | |
| Well meets IDWR construction standards | YES | | | 0 | |
| Wellhead and surface seal maintained | YES | | | 0 | |
| Casing and annular seal extend to low permeability unit | YES | | | 0 | |
| Highest production 100 feet below static water level | NO | | | 1 | |
| Well located outside the 100 year flood plain | YES | | | 0 | |
| Total System Construction Score | | | | 1 | |
| 2. Hydrologic Sensitivity | | | | | |
| Soils are poorly to moderately drained | YES | | | 0 | |
| Vadose zone composed of gravel, fractured rock or unknown | NO | | | 0 | |
| Depth to first water > 300 feet | NO | | | 1 | |
| Aquitard present with > 50 feet cumulative thickness | NO | | | 2 | |
| Total Hydrologic Score | | | | 3 | |
| 3. Potential Contaminant / Land Use - ZONE 1A | | IOC | VOC | SOC | Microbial |
| | | Score | Score | Score | Score |
| Land Use Zone 1A | CAMPGROUND | 0 | 0 | 0 | 0 |
| Farm chemical use high | NO | 0 | 0 | 0 | |
| IOC, VOC, SOC, or Microbial sources in Zone 1A | NO | NO | NO | NO | NO |
| Total Potential Contaminant Source/Land Use Score - Zone 1A | | 0 | 0 | 0 | 0 |
| Potential Contaminant / Land Use - ZONE 1B | | | | | |
| Contaminant sources present (Number of Sources) | CAMPGROUND | 1 | 1 | 1 | 1 |
| (Score = # Sources X 2) 8 Points Maximum | | 2 | 2 | 2 | 2 |
| Sources of Class II or III leacheable contaminants or Microbials | NO | 0 | 0 | 0 | |
| 4 Points Maximum | | 0 | 0 | 0 | |
| Zone 1B contains or intercepts a Group 1 Area | NO | 0 | 0 | 0 | 0 |
| Land use Zone 1B | Less Than 25% Agricultural Land | 0 | 0 | 0 | 0 |
| Total Potential Contaminant Source / Land Use Score - Zone 1B | | 2 | 2 | 2 | 2 |
| Cumulative Potential Contaminant / Land Use Score | | 2 | 2 | 2 | 2 |
| 4. Final Susceptibility Source Score | | 5 | 5 | 5 | 5 |
| 5. Final Well Ranking | | Low | Low | Low | Low |

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)
- 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Ranking:

- 0 - 5 Low Susceptibility
- 6 - 12 Moderate Susceptibility
- > 13 High Susceptibility

POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.